



## Seasonal pollen distribution in the atmosphere of Hobart, Tasmania: Preliminary observations and congruence with flowering phenology

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### Abstract:

The atmospheric pollen loads of Hobart, Tasmania, Australia, were monitored between September 2007 and July 2009. To examine the match of the airborne pollen composition with the flowering duration of their contributing plants, the phenology of native and non-native plants in various habitats near the pollen-trapping site was undertaken between August 2008 and July 2009. The pollen load was found to have a strong seasonal component associated with the start of spring in September. This is incongruent with the peak flowering season of the total taxa in October. In most taxa, atmospheric pollen signatures appeared before flowering was observed in the field. The presence of most pollen types in the atmosphere also exceeded the observed flowering duration of potential pollen-source taxa. Reasons for this may be related to the sampling effort of phenological monitoring, pollen blown in from earlier flowering populations outside of the sampling area, the ability of pollen to be reworked, and the large pollen production of some wind-pollinated taxa. In 2007-2008, 15 pollen types dominated the atmosphere, accounting for 90% of the airborne pollen load. The top six pollen types belonged to *Betula*, Cupressaceae, Myrtaceae, *Salix*, Poaceae and *Ulmus*. Comparatively, the annual pollen load of Hobart is lower than in most other Australian cities; however, the pollen signal of *Betula* is inordinately high. Native plants play a minor role as pollen contributors, despite the proximity of native habitats to the pollen-sampling location. The implications of the aerobiological observations are discussed in relation to public health.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Temperature

**Air Pollution:** Allergens

**Temperature:** Fluctuations

#### Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal, Urban



# Climate Change and Human Health Literature Portal

## Geographic Location:

resource focuses on specific location

Non-United States

**Non-United States:** Australasia

## Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

## Resource Type:

format or standard characteristic of resource

Research Article

## Timescale:

time period studied

Time Scale Unspecified